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ROSS D. SNYDER & ASSOCIATES, INC.
PO BOX 164075
AUSTIN, TX 78716-4075

EXAMINER	
CHRISS, ANDREW W	

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2472	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/782,390	ZININ, ALEXEY D.	
	Examiner	Art Unit	
	ANDREW CHRISS	2472	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment, filed June 24, 2010, has been entered and carefully considered. Claim 20 is amended, and Claims 1-38 are currently pending.

2. Objection to Claim 20 is withdrawn in light of Applicant's amendment to said claim.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 1, 2, 4, 17, 20, 21, 23, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan (United States Patent Application Publication US 2003/0112755 A1) in view of Oguchi et al (United States Patent Application Publication US 2002/0067725 A1), hereinafter Oguchi.

Regarding Claim 1, McDysan discloses marking packets carrying Layer-3 control information (paragraphs 0037 and 0042, wherein packets are marked with a differentiated services code point (DSCP) value). Examiner notes that DSCP is utilized in Internet Protocol (IP) (see paragraph 0010 of McDysan, which states "Diffserv enables an ingress boundary router to provide the QoS to aggregated flows simply by examining and/or marking each IP packet's header"), which is known in the art as an implementation of "Layer-3" in the OSI 7-layer Interconnect Model (i.e., the network layer). While McDysan discloses using Layer 2 Tunneling Protocol (L2TP) to implement a virtual private network (VPN) tunnel (paragraphs 0046 and 0047) and determination of a trusted CPE (paragraph 0042), McDysan does not disclose

encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information. In the same field of endeavor, Oguchi discloses encapsulating an L2TP VPN packet comprising Layer-2 encapsulation (paragraph 0215, Figure 25, wherein a packet containing L2TP is encapsulated with a PPP or Ethernet header). Examiner notes that point-to-point protocol (PPP) and Ethernet are known in the art as an implementation of "Layer 2" of the OSI 7-layer Interconnect Model (i.e., the data link layer). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Layer 2 encapsulation disclosed in Oguchi with the Layer-3 marking disclosed in McDysan in order to find virtual routers on edge routers belonging to the same VPN so that the virtual routers belonging to the same VPN can be mutually connected with tunnels (such as the L2TP tunnel or the IPsec tunnel) in case routing information is exchanged between the virtual routers belonging to the same VPN (see paragraph 0085 of Oguchi).

Regarding Claim 2, McDysan discloses marking the packets using a unique protocol identifier (paragraphs 0037 and 0042, wherein packets are marked with a three bit differentiated services code point (DSCP) value (e.g., 000, 010, and 101).

Regarding Claim 4, McDysan discloses applying interface groups to determine when marking of control packets is to be done (Figure 5 and paragraph 0036, wherein the classifier in the LAN port determines by reference to a classifier table indexed by multiple indices, such as source port and destination port, to determine an interface for communication and to send values to a packet marker).

Regarding Claim 17, while McDysan marking a packet using a DSCP value (paragraphs 0037 and 0042), using Layer 2 Tunneling Protocol (L2TP) to implement a virtual private

network (VPN) tunnel (paragraphs 0046 and 0047), and determination of a trusted CPE (paragraph 0042), McDysan does not disclose encapsulating the packets according to control encapsulation. In the same field of endeavor, Oguchi discloses encapsulating an L2TP VPN packet comprising Layer 3 encapsulation (paragraph 0215, Figure 25, wherein a packet containing an IP header). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control encapsulation disclosed in Oguchi with the Layer-3 marking disclosed in McDysan in order to find virtual routers on edge routers belonging to the same VPN so that the virtual routers belonging to the same VPN can be mutually connected with tunnels (such as the L2TP tunnel or the IPsec tunnel) in case routing information is exchanged between the virtual routers belonging to the same VPN (see paragraph 0085 of Oguchi).

Regarding Claim 20, McDysan discloses an apparatus comprising a network element (Figure 5, CPE edge router 34 comprising LAN physical ports (60a-60n) and WAN physical ports 64a-64n that further comprise packet classifiers 80 (LAN) and 100 (WAN)) that marks packets carrying Layer-3 control information (paragraphs 0037 and 0042, wherein packets are marked with a differentiated services code point (DSCP) value). Examiner notes that DSCP is utilized in Internet Protocol (IP) (see paragraph 0010 of McDysan, which states "Diffserv enables an ingress boundary router to provide the QoS to aggregated flows simply by examining and/or marking each IP packet's header"), which is known in the art as an implementation of "Layer-3" in the OSI 7-layer Interconnect Model (i.e., the network layer). While McDysan discloses using Layer 2 Tunneling Protocol (L2TP) to implement a virtual private network (VPN) tunnel (paragraphs 0046 and 0047) and determination of a trusted CPE (paragraph 0042),

McDysan does not disclose encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information. In the same field of endeavor, Oguchi discloses encapsulating an L2TP VPN packet comprising Layer-2 encapsulation (paragraph 0215, Figure 25, wherein a packet containing L2TP is encapsulated with a PPP or Ethernet header). Examiner notes that point-to-point protocol (PPP) and Ethernet are known in the art as an implementation of "Layer 2" of the OSI 7-layer Interconnect Model (i.e., the data link layer). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Layer 2 encapsulation disclosed in Oguchi with the Layer-3 marking disclosed in McDysan in order to find virtual routers on edge routers belonging to the same VPN so that the virtual routers belonging to the same VPN can be mutually connected with tunnels (such as the L2TP tunnel or the IPsec tunnel) in case routing information is exchanged between the virtual routers belonging to the same VPN (see paragraph 0085 of Oguchi).

Regarding Claim 21, McDysan discloses marking the packets using a unique protocol identifier (paragraphs 0037 and 0042, wherein packets are marked with a three bit differentiated services code point (DSCP) value (e.g., 000, 010, and 101).

Regarding Claim 23, McDysan discloses applying interface groups to determine when marking of control packets is to be done (Figure 5 and paragraph 0036, wherein the classifier in the LAN port determines by reference to a classifier table indexed by multiple indices, such as source port and destination port, to determine an interface for communication and to send values to a packet marker).

Regarding Claim 36, while McDysan marking a packet using a DSCP value (paragraphs 0037 and 0042), using Layer 2 Tunneling Protocol (L2TP) to implement a virtual private

network (VPN) tunnel (paragraphs 0046 and 0047), and determination of a trusted CPE (paragraph 0042), McDysan does not disclose encapsulating the packets according to control encapsulation. In the same field of endeavor, Oguchi discloses encapsulating an L2TP VPN packet comprising Layer 3 encapsulation (paragraph 0215, Figure 25, wherein a packet containing an IP header). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control encapsulation disclosed in Oguchi with the Layer-3 marking disclosed in McDysan in order to find virtual routers on edge routers belonging to the same VPN so that the virtual routers belonging to the same VPN can be mutually connected with tunnels (such as the L2TP tunnel or the IPsec tunnel) in case routing information is exchanged between the virtual routers belonging to the same VPN (see paragraph 0085 of Oguchi).

5. **Claims 3 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi as applied to claims 1 and 20 above, and further in view of Nakamichi et al (United States Patent Application Publication US 2002/0085498 A1), hereinafter Nakamichi. The combination of McDysan and Oguchi discloses all of the limitations of Claims 1 and 20, as described above. However, the references do not expressly disclose marking the packets using a link-local MPLS label. In the same field of endeavor, Nakamichi discloses using a "link state type" field in a link state advertisement (LSA) in an MPLS network. Specifically, Nakamichi discloses a value for said field that denotes "link-local," indicating that the flooding scope is within a local (sub)network (paragraphs 0065 and 0066). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the link state advertisement disclosed in Nakamichi with the marker/policer disclosed in McDysan, as

modified above, in order to allow a node in a communications network to collect traffic information and perform load sharing depending on traffic conditions.

6. **Claims 5-12 and 24-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi as applied to claims 4 and 23 above, and further in view of Yu et al (United States Patent Application Publication US 2004/0010583 A1), hereinafter Yu.

Regarding Claims 5 and 24, the combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above. However, the aforementioned references do not disclose applying interface groups to packet communications within a particular interface group. In the same field of endeavor, Yu discloses packet communications within a particular interface group (Figure 1, interface group defined between interfaces 'a' and 'd' within network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 6 and 25, Yu further discloses interface groups assigned to backbone interfaces (Figure 4, static tunnel through Internet between network device A and network device B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 7 and 26, Yu further discloses interface groups assigned to interfaces with customer-specific interface groups (Figure 4, interface 'a' between network device A and

Host PC). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 8 and 27, Yu further discloses applying interface groups to peer interfaces (Figure 4, static tunnel between network device A and network device D). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 9 and 28, Yu further discloses applying interface groups to packet communications between interface groups (Figure 4, connections between peer, backbone, and customer networks at network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 10 and 29, Yu further discloses applying interface groups to packet communications between backbone and customer-specific interface groups (Figure 4, connections between peer, backbone, and customer networks at network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking

disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 11 and 30, Yu further discloses applying interface groups to packet communications between customer-specific and peer interface groups (Figure 4, connections between peer, backbone, and customer networks at network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

Regarding Claims 12 and 31, Yu further discloses applying interface groups to packet communications between backbone and peer interface groups (Figure 4, connections between peer, backbone, and customer networks at network device A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interface group application disclosed in Yu with the control packet marking disclosed in McDysan, as modified above, in order to withstand failures of network device components, without triggering unnecessary failover in a network device.

7. **Claims 13 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi, as applied to claims 4 and 23 above, and further in view of Holden et al (United States Patent 5,802,178), hereinafter Holden. The combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above. However, the aforementioned references do not expressly disclose applying interface groups to communication of ICMP packets. In the same field of endeavor, Holden discloses a secure network interface

unit (SNIU) that marks the protocol and type fields to indicate an ICMP Echo Reply, signs the packet, and sends through an interface (column 20, line 66 - column 21, line 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ICMP marking disclosed in Holden with the interface group determination disclosed in McDysan, as modified above, in order to provide security assurances for computers operating in secure and non-secure networks (see column 2, lines 56-59 of Holden).

8. **Claims 14 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi, as applied to claims 4 and 23 above, and further in view of Pan et al (United States Patent 7,336,615), hereinafter Pan. The combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above. However, the aforementioned references do not expressly disclose applying interface groups to communication of ping packets. In the same field of endeavor, Pan discloses assigning predetermined port numbers to LSP ping messages (column 14, lines 48-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine ping message port assignment disclosed in Pan with the marker/policer disclosed in McDysan, as modified above, in order to automatically detect the status of a label switched path.

9. **Claims 15 and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi, as applied to claims 4 and 23 above, and further in view of Fotedar (United States Patent Application Publication US 2004/0085965 A1). The combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above. However, the aforementioned references do not expressly disclose applying interface groups to communication of traceroute packets. In the same field of endeavor, Fotedar discloses

assignment of traceroute packets to a virtual router address indicative of a loopback interface (paragraph 0011). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the traceroute packet assignment disclosed in Fotedar with the marker/policer disclosed in McDysan, as modified above, in order to enable direct communications between a virtual router and a virtual address, without having to know a physical address.

10. **Claims 16 and 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi as applied to claims 4 and 23 above, and further in view of Tuomenoksa et al (United States Patent Application Publication US 2002/0023210 A1), hereinafter Tuomenoksa. The combination of McDysan and Oguchi discloses all of the limitations of Claims 4 and 23, as described above. However, the references do not expressly applying interface groups to communication of packet from Network Operations Center (NOC) hosts. In the same field of endeavor, Tuomenoksa discloses setting up a tunnel interface with a NOC (paragraph 0136) and communicating packets, including control information, with the NOC via the tunnel (paragraphs 0141-0143). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the tunneling disclosed in Tuomenoksa with the interface grouping disclosed in McDysan, as modified above, in order to establish virtual private networks using nonproprietary hardware on local and wide area networks (see paragraphs 0016 and 0017 of Tuomenoksa).

11. **Claims 18 and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi as applied to claims 1 and 20 above, and further in view of Johansson (United States Patent 6,061,330). The combination of McDysan and Oguchi discloses

all of the limitations of Claims 1 and 20, as described above. However, the references do not expressly disclose receiving unmarked control packets using rate-limited queues. In the same field of endeavor, Johansson discloses an ATM switch receiving packets into rate-limited queues (Figure 1, 116; Figure 4a, 410). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the rate-limited queuing disclosed in Johansson with the unmarked control packets (i.e., packets received prior to being marked) disclosed in McDysan, as modified above, in order to perform fair queuing scheduling using both buffer occupancy and input rate.

12. **Claims 19 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over McDysan in view of Oguchi, as applied to claims 1 and 20 above, and further in view of Hussey et al (United States Patent Application Publication US 2001/0049744 A1), hereinafter Hussey. The combination of McDysan and Oguchi discloses all of the limitations of Claims 1 and 20, as described above. Further, McDysan discloses receiving packets (paragraphs 0037 and 0042). However, the aforementioned references do not expressly disclose processing the received packets at a line rate. In the same field of endeavor, Hussey discloses a processor pool aggregation technique wherein a received packet data stream is capable of being processed at a line rate (paragraph 0050). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the packet processing disclosed in Hussey with the marker/policer disclosed in McDysan, as modified above, in order to improve data processing within a data-handling device.

Response to Arguments

13. Applicant's arguments filed June 24, 2010 regarding rejection of Claims 1-38 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive.

Regarding Claims 1 and 20, Applicant states "none of the cited portions of the cited references appear to teach or suggest, for example, "Layer-3 control information." Examiner respectfully disagrees. Examiner notes that Applicant has not specifically pointed out how the language of the claims patentably distinguishes them from the references. Examiner turns to Applicant's specification at paragraph 0004, which defines the OSI 7-layer model. More specifically, the network layer is defined as Layer-3. Examiner further turns to The OSI Reference Model, which was provided to Applicant with the Office Action mailed June 5, 2009, wherein Layer-3 (i.e., the Network Layer) corresponds to the Internet Protocol (IP). Turning to the McDysan reference, paragraph 0009 recites: "Diffserv is an IP QoS architecture that achieves scalability by conveying an aggregate traffic classification within a DS field (e.g., the IPv4 Type of Service (TOS) byte or IPv6 traffic class byte) of each IP-layer packet header. The first six bits of the DS field encode a Diffserv Code Point (DSCP) that requests a specific class of service or Per Hop Behavior (PHB) for the packet at each node along its path within a Diffserv domain." Examiner further notes that the claimed "control information" is not further defined in the claim language so as to require a structure or feature of said information other than being "Layer-3 control information." As the DSCP disclosed in McDysan controls the QoS applied to a packet (e.g., in paragraphs 0037 and 0042) and further is indicative of an IP QoS (i.e., Layer-3), Examiner submits that the claim limitation "Layer-3 control information" is met by the disclosure of McDysan. Applicant further states paragraph 0042 of McDysan "fails to disclose or suggest, and teaches away from "marking packets carrying the Layer-3 control information."

Examiner respectfully disagrees. Examiner notes that while alleging that the disclosure of McDysan teaches away from marking packets, Applicant has not specifically pointed out how the disclosure teaches away or how the language of the claims patentably distinguishes them from the references. As described above, McDysan discloses marking packets via a DSCP code point in IP packets, and therefore meets the claim limitation "marking packets carrying the Layer-3 control information."

Regarding Claims 2 and 21, Applicant states "Examiner does not explain how the Examiner considers "a three bit differentiated services code point value…to be a "unique protocol identifier." Examiner respectfully disagrees. Examiner notes that the DSCP value disclosed in McDysan uniquely identifies how the packet is to be treated (e.g., binary value of 000 indicating the packet is to be treated as best-effort in paragraph 0042).

Regarding Claims 4 and 23, Applicant states "the alleged teaching of "to send values to a packet marker" does not teach or suggest "…to determine when marking of control packets is to be done." Examiner respectfully disagrees. Examiner notes that Applicant has not specifically pointed out how the language of the claims patentably distinguishes them from the references. McDysan, at Figure 5 and paragraph 0036, discloses a classifier in the LAN port determining, via by reference to a classifier table indexed by multiple indices (e.g., source port and destination port), to determine an interface for communication and to send values to a packet marker. Further, at paragraphs 0037 and 0042, a determination is made with regard to marking of a packet (e.g., marking a packet when received from an access network).

Regarding Claims 17 and 36, Applicant states "the cited portions of the cited reference do not appear to disclose, as an example, according to control encapsulation." Examiner

respectfully disagrees. Examiner notes that Applicant has not specifically pointed out how the language of the claims patentably distinguishes them from the references. Further, Examiner notes that the claimed "control encapsulation" is not further defined in the claim language so as to require a certain format for the encapsulation. As such, Examiner gives the claim language its broadest reasonable interpretation without unnecessarily importing limitations from the specification. Oguchi discloses encapsulating an L2TP VPN packet (i.e., performing control encapsulation) comprising Layer 3 encapsulation (paragraph 0215, Figure 25, wherein a packet containing an IP header).

Regarding Claims 3 and 22, Applicant states ""to allow a node in a communications network to collect traffic information and perform load sharing depending on traffic conditions"...would not have motivated one of ordinary skill in the art to combine the alleged teachings of the cited portions of the cited references." Examiner respectfully disagrees. Examiner submits recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, Nakamichi discloses, at paragraph 0012, a need to allow a node in a communication network to collect traffic information to thereby achieve load sharing depending on the conditions of the traffic. Therefore, Examiner notes that the references themselves provide a motivation to combine the disclosed teachings.

Regarding Claims 5 and 24, Applicant states that ""Figure 1" does not appear to disclose "interface group defined between interfaces 'a' and 'd' within network device A." Examiner respectfully disagrees. Claims 5 and 24 require "applying interface groups to packet communications within a particular interface group." However, Examiner notes that the claim language is not further defined so as to further limit the step of applying interface groups or the features of a particular interface group. Per MPEP 2106: "USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily). *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320,1322 (Fed. Cir. 1989)." Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications. Accordingly, Yu discloses assigning interfaces to communicate within and between various types of networks (see Figures 1 and 4 and paragraphs 0022 and 0025). Further regarding Claims 5 and 24, Yu discloses packet communications between interfaces 'a' and 'd' of Network Device A in Figure 1 (at paragraph 0034, wherein tunnel interface 'd' is assigned to physical interface 'a' within an interface group).

Regarding Claims 6 and 25, Applicant states that "the block diagram of Figure 4 of the Yu et al. reference does not disclose or suggest, as an example, "…the step of: applying interface

groups to packet communications within a backbone interface group." Examiner respectfully disagrees. Figure 4 of Yu discloses setting up a static tunnel (i.e., "Static Tunnel A") across the Internet (i.e., backbone) between two network devices. Given its broadest reasonable interpretation, the claimed "backbone interface group" limitation is met by interface 'd', which connects Network Device A to the tunnel over the Internet.

Regarding Claims 7 and 26, Applicant states that "the block diagram of Figure 4 of the Yu et al. reference does not disclose or suggest, as an example, "...the step of: applying interface groups to packet communications within a customer-specific interface group." Examiner respectfully disagrees. Yu discloses communications with assigning interface 'a' to interconnect with a Host PC (i.e., customer-specific interface group given its broadest reasonable interpretation) in Figure 4.

Regarding Claims 8 and 27, Applicant states that "the block diagram of Figure 4 of the Yu et al. reference does not disclose or suggest, as an example, "...the step of: applying interface groups to packet communications within a peer interface group." Yu discloses communications via a static tunnel between Network Device A and Network Device D (i.e., peer devices given its broadest reasonable interpretation) via interface 'a' on Network Device A (see Figure 4). Given its broadest reasonable interpretation, the claimed "peer interface group" limitation is met by the disclosed interface assignment (i.e., interface 'd') used in order to communicate between like devices (i.e., Network Device A and Network Device D).

Regarding Claims 9 and 28, Applicant states that "the block diagram of Figure 4 of the Yu et al. reference does not disclose or suggest, as an example, "...the step of: applying interface groups to packet communications between interface groups." Examiner respectfully disagrees.

As stated above, Examiner has given the claim language "applying interface groups" its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications. Yu discloses applying interface groups to packet communications between interface groups (Figure 4, connections between peer (e.g., between Network Device A and Network Device D), backbone (e.g., in Network Device A between interfaces 'a' and 'd', and customer networks (e.g., between Network Device A at interface 'a' and Host PC 12).

Regarding Claims 10 and 29, Applicant states that "the block diagram of Figure 4 of the Yu et al. reference does not disclose or suggest, as an example, "…the step of: applying interface groups to packet communications between backbone and customer-specific interface groups." Examiner respectfully disagrees. Yu further discloses applying interface groups to packet communications between backbone and customer-specific groups (Figure 4, connections between backbone (e.g., in Network Device A between interfaces 'a' and 'd' and customer networks (e.g., between Network Device A at interface 'a' and Host PC 12).

Regarding Claims 11 and 30, Applicant states that "the block diagram of Figure 4 of the Yu et al. reference does not disclose or suggest, as an example, "…the step of: applying interface groups to packet communications between customer-specific and peer interface groups." Examiner respectfully disagrees. Yu discloses applying interface groups to packet communications between customer-specific and peer interface groups (Figure 4, connections between peer (e.g., between Network Device A and Network Device D) and customer networks (e.g., between Network Device A at interface 'a' and Host PC 12).

Regarding Claims 12 and 31, Applicant states that "the block diagram of Figure 4 of the Yu et al. reference does not disclose or suggest, as an example, "…the step of: applying interface

groups to packet communications between backbone and peer interface groups." Examiner respectfully disagrees. Yu discloses applying interface groups to packet communications between interface groups (Figure 4, connections between peer (e.g., between Network Device A and Network Device D) and backbone (e.g., in Network Device A between interfaces 'a' and 'd').

Regarding Claims 13 and 32, Applicant states "even if an attempt were made to combine the teachings of the Holden reference and the McDysan reference, such an attempted combination would not yield the subject matter of Claims 13 and 32." Examiner respectfully disagrees. Per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." The McDysan, Oguchi, and Holden references are directed to processing data packets and are therefore in analogous arts. Holden further discloses a secure network interface unit (SNIU) that marks the protocol and type fields to indicate an ICMP Echo Reply, signs the packet, and sends through an interface (column 20, line 66 - column 21, line 10).

Regarding Claims 14 and 33, Applicant states "even if an attempt were made to combine the teachings of the Pan reference and the McDysan reference, such an attempted combination would not yield the subject matter of Claims 14 and 33." Examiner respectfully disagrees. Per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." The McDysan, Oguchi, and Pan references are directed to processing data packets and are therefore in analogous arts. With

regards to the claim limitation "applying interface groups to communication of ping packets," Pan discloses assigning predetermined port numbers to LSP ping messages (column 14, lines 48-55).

Regarding Claims 15 and 34, Applicant states "even if an attempt were made to combine the teachings of the Fotedar reference and the McDysan reference, such an attempted combination would not yield the subject matter of Claims 15 and 34." Examiner respectfully disagrees. Per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." The McDysan, Oguchi, and Fotedar references are directed to processing data packets and are therefore in analogous arts. Further, Fotedar discloses assignment of traceroute packets to a virtual router address indicative of a loopback interface (paragraph 0011).

Regarding Claims 16 and 35, Applicant states "even if an attempt were made to combine the teachings of the Tuomenoksa reference and the McDysan reference, such an attempted combination would not yield the subject matter of Claims 16 and 35." Examiner respectfully disagrees. Per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." The McDysan, Oguchi, and Tuomenoksa references are directed to processing data packets and are therefore in analogous arts. Further, Tuomenoksa discloses setting up a tunnel interface with a NOC (paragraph 0136) and communicating packets, including control information, with the NOC via the tunnel (paragraphs 0141-0143).

Regarding Claims 18 and 37, Applicant states that the cited portions of the cited references do not disclose "control packets." Applicant further states "even if an attempt were made to combine the teachings of the Johansson reference and the McDysan reference, such an attempted combination would not yield the subject matter of Claims 18 and 37." Examiner respectfully disagrees. The claim language "control packets" is not further defined in the claim language so as to further limit the content or structure of the claimed "control packet." As such, Examiner has given the claim term its broadest reasonable interpretation without unnecessarily importing limitations from the specification and interpreted "control packet" to comprise any messaging related to control of communications (e.g., setup, teardown, parameter management, etc.). Further, per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." The McDysan, Oguchi, and Johansson references are directed to processing data packets and are therefore in analogous arts." While McDysan discloses processing control information in a network (paragraphs 0037 and 0042), the combination of McDysan and Oguchi does not disclose processing the control packets at a line rate. In the same field of endeavor, Figure 4a, step 410 of Johansson "determines when a predetermined number Input RateLimit of Cells are received" (column 10, lines 45-47). As such, Johansson provides a general teaching of a rate-limited queue receiving packets.

Regarding Claims 19 and 38, Applicant states "even if an attempt were made to combine the teachings of the Johansson reference and the McDysan reference, such an attempted combination would not yield the subject matter of Claims 19 and 38." Examiner notes that the

Johansson reference is not relied upon for rejection of Claims 19 and 38 under 35 U.S.C. 103(a). Per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." The McDysan, Oguchi, and Hussey references are directed to processing data packets and are therefore in analogous arts. Further, Hussey discloses a processor pool aggregation technique wherein a communication device "receives a packet data stream via the communication network…at a line rate that might otherwise overwhelm the processing capabilities of the NIC…and result in dropped packets and reduced quality of service" (paragraph 0050).

For the reasons stated above, rejection of Claims 1-38 under 35 U.S.C. 103(a) is maintained.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW CHRISS whose telephone number is (571)272-1774. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William Trost/
Supervisory Patent Examiner, Art Unit 2472

/A. C./
Examiner, Art Unit 2472
9/1/2010